

Appl. No. 10/014,977  
Amendment dated April 22, 2005  
Response to Interview Summary of April 13, 2005 Interview

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Amended) A method of analyzing alveolar breath comprising:  
expiring breath through an analysis chamber;  
continuously monitoring a concentration of a first component of the breath by means  
of measuring the light energy absorbed by the first component as the breath is expired through the  
analysis chamber to determine when alveolar breath is in the analysis chamber; and  
triggering at least one concentration spectroscopic measurement of a second  
component of the breath once the alveolar breath is in the analysis chamber, based on the  
concentration of the first component in ~~a previously~~ only the immediately previous expired breath.
2. (Cancelled)
3. (Cancelled)
4. (Original) The method of claim 1, wherein triggering the at least one  
concentration measurement of the second component of the breath includes triggering the at least  
one concentration measurement when the concentration of the first component crosses a threshold  
concentration.
5. (Original) The method of claim 4, wherein the threshold concentration is at  
least 3.5% relative concentration of the first component.
6. (Original) The method of claim 4, wherein the threshold concentration is at  
least 4.5% relative concentration of the first component.
7. (Cancelled)

Appl. No. 10/014,977

Amendment dated April 22, 2005

Response to Interview Summary of April 13, 2005 Interview

8. (Original) The method of claim 1, wherein the first component is carbon dioxide, oxygen, or water vapor.
9. (Original) The method of claim 1, wherein the second component is ammonia, nitric oxide, or a carbon dioxide isotope.
10. (Original) The method of claim 1, wherein the second component is an element selected from one of the following chemical groups: alcohols, alkanes, and ketones.
11. (Amended) A method of analyzing alveolar breath comprising:  
expiring breath through an analysis chamber;  
continuously measuring a concentration of a first component of the breath expired through the analysis chamber by means of measuring the light energy absorbed by the first component;  
comparing each measured concentration of the first component to a threshold concentration to determine when alveolar breath is in the analysis chamber; and  
triggering at least one concentration spectroscopic measurement of a second component of the breath once the alveolar breath is in the analysis chamber, based on the concentration of the first component in a ~~previously~~ only the immediately previous expired breath.
12. (Cancelled)
13. (Original) The method of claim 11, wherein the threshold concentration is at least 3.5% relative concentration of the first component.
14. (Original) The method of claim 11, wherein the threshold concentration is at least 4.5% relative concentration of the first component.
15. (Cancelled)

Appl. No. 10/014,977  
Amendment dated April 22, 2005  
Response to Interview Summary of April 13, 2005 Interview

16. (Cancelled)
17. (Original) The method of claim 11, wherein the first component is carbon dioxide, oxygen, or water vapor.
18. (Original) The method of claim 11, wherein the second component is ammonia, nitric oxide, or a carbon dioxide isotope.
19. (Original) The method of claim 11, wherein the second component is an element selected from one of the following chemical groups: alcohols, alkanes, and ketones.
20. (Amended) A method of analyzing alveolar breath comprising:
  - expiring breath through an analysis chamber;
  - passing light through the breath in the analysis chamber, the light comprising a first wavelength corresponding to a first absorption feature of a first component of the breath;
  - continuously measuring absorption of the light at the first wavelength by the first component to determine when alveolar breath is present in the analysis chamber; and
  - triggering at least one concentration spectroscopic measurement of the second component of the breath once the alveolar breath is in the analysis chamber, based on the concentration of the first component in ~~a previously~~ only the immediately previous expired breath wherein the light at the first wavelength and the light at the second wavelength are multiplexed prior to entering the analysis chamber.
21. (Original) The method of claim 20, wherein the light further comprises a second wavelength corresponding to a second absorption feature of the second component.
22. (Original) The method of claim 21, wherein the light at the first wavelength and the light at the second wavelength follow substantially similar paths in the analysis chamber.

Appl. No. 10/014,977

Amendment dated April 22, 2005

Response to Interview Summary of April 13, 2005 Interview

23. (Cancelled)
24. (Original) The method of claim 20, wherein triggering the at least one concentration measurement of the second component of the alveolar breath in the analysis chamber includes triggering the at least one concentration measurement when the concentration of the first component crosses a threshold concentration.
25. (Original) The method of claim 24, wherein the threshold concentration is at least 3.5% relative concentration of the first component.
26. (Original) The method of claim 24, wherein the threshold concentration is at least 4.5% relative concentration of the first component.
27. (Cancelled)
28. (Cancelled)
29. (Original) The method of claim 20, wherein the first component is carbon dioxide, oxygen, or water vapor.
30. (Original) The method of claim 20, wherein the second component is ammonia, nitric oxide, or a carbon dioxide isotope.
31. (Original) The method of claim 20, wherein the second component is an element selected from one of the following chemical groups: alcohols, alkanes, and ketones.
32. (Amended) A method of analyzing alveolar breath comprising:  
expiring breath through an analysis chamber;  
passing light through the breath in the analysis chamber, the light comprising a first wavelength corresponding to a first absorption feature of a first component of the breath;

Appl. No. 10/014,977

Amendment dated April 22, 2005

Response to Interview Summary of April 13, 2005 Interview

continuously calculating a concentration of the first component of the breath by monitoring absorption of the light at the first wavelength by the first component;

comparing each calculated spectroscopic concentration of the first component to determine when alveolar breath is present in the analysis chamber; and

triggering at least one concentration measurement of the second component of the breath once the alveolar breath is in the analysis chamber, based on the concentration of the first component in ~~a previously~~ only the immediately previous expired breath

wherein the light at the first wavelength and the light at the second wavelength are multiplexed prior to entering the analysis chamber.

33. (Original) The method of claim 32, wherein the light further comprises a second wavelength corresponding to a second absorption feature of the second component.

34. (Original) The method of claim 33, wherein the light at the first wavelength and the light at the second wavelength follow substantially similar paths in the analysis chamber.

35. (Cancelled)

36. (Original) The method of claim 32, wherein the threshold concentration is at least 3.5% relative concentration of the first component.

37. (Original) The method of claim 32, wherein the threshold concentration is at least 4.5% relative concentration of the first component.

38. (Cancelled)

39. (Original) The method of claim 32, wherein triggering the at least one concentration measurement of the second component of the alveolar breath in the analysis chamber includes triggering at least one spectroscopic measurement of the second component.

Appl. No. 10/014,977

Amendment dated April 22, 2005

Response to Interview Summary of April 13, 2005 Interview

40. (Original) The method of claim 32, wherein the first component is carbon dioxide, oxygen, or water vapor.

41. (Original) The method of claim 32, wherein the second component is ammonia, nitric oxide, or a carbon dioxide isotope.

42. (Original) The method of claim 32, wherein the second component is an element selected from one of the following chemical groups: alcohols, alkanes, and ketones.